INTRODUCTION

Concept and definition of psychology

Psychology can be defined as the scientific study of behavior and mental process. This definition contains three key ideas: scientific, behavior, and mental processes. Like many familiar terms, each to these is used in a specific way by psychologists.

Scientific refers to the fact that the study of psychology is based on information collected through a set as systematic procedures known as the scientific method. The information collected is referred to as data, specifically defined as records of the observations or measurements in a study. The heart of the scientific method is specifying publicly a precise set of procedures for collecting data so that others can collect data themselves using the same methods, or what they regard to be improved methods. For example, a psychologist studying dreams might specify that the subjects in sleep laboratories should be awakened and questioned about their dreams whenever during sleep their eyes make specific kinds of rapid movements. The psychologists follow set procedures for collecting dream data that are spelled out in detail for anyone else to follow, question, or improve. Knowledge in psychology is based on inferences from data that are open to inspection and criticism. We will discuss the scientific method further later in this chapter. The key point we want to make here is that the systematic procedures of the scientific method give psychologists data that can be clearly understood and evaluated.

Behavior is any activity that can be observed, recorded, and measured. This includes, first, what living beings do-that is, their actual movements in time and space. For example, smiling, sucking, and sleeping are all behaviors commonly seen in babies. Behavior also includes what people say or write. Their reports of their fears or their desires are behaviors. In addition, behavior includes physiological, or bodily, changes such as elevations in blood pressure or alterations in the electrical activity of the brain. For example, when equipment measuring electrical brain activity is attached to a person's head and it begins emitting more signals of the sort called alpha waves, we observe that a change in behavior has taken place.

Mental processes include thought, memories, emotions, motivations, dreams, perceptions, and beliefs. Although it may seem obvious that psychologists should investigate mental processes, the study of these processes presents a special problem in that they cannot be directly observed, recorded, or measured. Because of this, some psychologists once excluded mental processes from the study of psychology. Since then, however, psychologists have developed many methods for studying these processes. Most contemporary psychologists feel that mental processes can be studied by observing changes in behavior in specific situations and then inferring that a change has also occurred in a mental process. For Example, psychologists can study an individual's level of alertness by measuring changes in the electrical signals generated by the brain. Stress can be inferred by measuring changes in voice quality. Under certain conditions attention in newborn infants can be inferred from decreases in heart rate and slower breathing.

The study of behavior and mental processes poses many puzzles, puzzles that we can begin to solve through the scientific method. The practice of science requires intellectual curiosity, objectivity, determination, perseverance, and above all, a willingness to look beyond common sense and obvious answers. These qualities are necessary if psychologists are to achieve their goals.
It should noted that the definition of psychology has been evolving over the years, decades and century. Initially it was defined as the studies of soul, then of mind and consciousness like terms entered into the definition ,next it was replaced by the term unconscious which in turn by behavior, self and mental processes ..it is why someone has said " psychology first lost its soul then its mind finally its consciousness"

The Goals of Psychology

The goals of psychology are similar to those of any science. Science exists because people are curious, because they want to have accurate knowledge, and because they want to improve their lives. Psychologists attempt to describe, explain, and predict behavior and mental processes, and to use the knowledge gained through study to promote human welfare.

The first and basic goal is to describe, that is, to observe and measure behavior and mental processes. For example, if we wanted to study children at play, we might begin just by watching them and recording who talks to whom how often and measuring the amount of time the children spend at each game. If we wanted to study alertness, we might use an instrument called an electroencephalograph (EEG), a device that measures the electrical activity of the brain, to look at the brain's activity in a variety of circumstances. The

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structure and functioning of the brain can be studied and measured through electronic brain scans. Personality and intelligence can be described and measured by administering specially designed tests. In each case, the primary purpose is to gather data in an objective and accurate manner.

The second goal of psychology is to explain what the data mean. Psychologists usually accomplish this goal by formulating a **theory**, a coherent group of assumptions and proposition that can explain the data. Forming theories in psychology is especially challenging because so many factors can influence behavior and mental processes. When a new neighbour doesn't answer when you say "good morning," a variety of explanations is possible. Maybe your neighbor is an unfriendly person, or perhaps he doesn't hear well. Maybe he's angry at you for not keeping your home tidy on the outside, or perhaps a passing truck drowned out your voice. Maybe this particular person just doesn't "wake up" until midday. Any one of these reasons, or some combination of these, might explain the neighbor's behavior. Psychologists have a variety of theories to explain that behavior and other much more complex behaviors. There are even theories about the way people come up with theories. *Attribution theory* is the theory that attempts to explain how ordinary people, and that includes all of us, formulate theories to explain how other people act. Psychologists continually generate theories to help them explain the most recent data about behavior and mental processes. However, before these theories are accepted they are subjected to rigorous tests based on the scientific method.

One test of a theory's accuracy and usefulness is its ability to predict behavior and mental processes. Given a particular set of circumstances, a theory should allow psychologists to meet their third goal; predicting what will happen in those circumstances. For example a theory of cognitive development should be able to specify the kinds of thinking a child can manage at a particular age. We will discuss Jean Piaget's well-known theory of child development, an attempt to do precisely this.

Psychology's final, and some feel ultimate, goal is the application of knowledge to promote human welfare. The most obvious application is in a subfield of psychology known as clinical psychology, where our knowledge of behavior and mental processes is used to help individuals with psychological disorders. But even if you never see a psychologist for this kind of help, most of you probably have been affected by psychological research. Knowledge gained through psychological research touches almost every aspect of our lives. It ranges from the way we raise and teach our children to the tests to gain admission to college, from the advertising we see on television to the design of airplane cockpits, and from the way leaders make decisions to the way nations resolve conflicts.

Historical antecedents of psychology

The present-day methods of psychology are quite sophisticated. They clearly make psychology a science. But the study of behavior and mental processes has not always been conducted scientifically. In this section we will explore the background and development of modern psychology and see that it has clear roots in field that belong to both the humanities and the sciences. Specifically, we will see that psychology is actually a hybrid science, resulting from the combination of philosophy, with its questions about human nature, and physiology –the branch of biology that studies living organisms. We will review briefly the central ideas of these two fields, the work of the two men who launched the new science of psychology.

Philosophy and physiology are ancient fields of study. Philosophy is often traced to the Greek philosopher Socrates (470-399 B.C.) Socrates and his followers, such as Plato and Aristotle, struggled with questions about human nature. Are people inherently good or evil? Are they rational or irrational? Can they perceive reality correctly? What is consciousness, and how does it work? How do people think, reason, and plan? How do they create? Are humans truly capable of free choice, or is all action determined by forces in the environment?

These and other questions are still widely debated by philosophers. How one answers these questions depends, inpart, upon assumptions about human nature. These assumptions, in turn, underlie several of the perspectives on psychology that we will discuss in the next section. However, psychologists have attempted to go beyond these difficult either/or questions to study specifically when people behave in helpful, altruistic, and caring ways, how they are rational and irrational, and how much of their behavior is controlled versus how much is freely chosen. At the same time psychologists push forward by trying to discover what can be known through the scientific analysis of other specific behaviors and events.

Physiology is as old as philosophy. The Greek Physician Hippocrates, who lived at the same time as Socrates, is often referred to as the father of medicine. Hippocrates studies the workings of the body extensively and can therefore be considered the first physiologist. Like today's physiologists, Hippocrates was curious about human anatomy, the functioning of human organs, and biological systems. He anticipated today's biopsychologists by considering the relationship between the body and mind. He learned from his

observations that the brain was the most powerful organ of the human body in that it controlled other organs and parts of the body including the eyes, ears, tongue, hands, and feet. He also saw the brain as the "Interpreter of consciousness."

It was not until the nineteenth century, however, that researchers developed the techniques and methods needed to explore systematically the workings of the human body. One physiologist whose work was highly influential was Hermann von Helmholtz (1821-94). A pioneering neural scientist, Helmholtz conducted groundbreaking research on the nervous system and on key aspects of vision, hearing, and perception. His breakthroughs contribute much to our knowledge of how human take in information about the external world, a question that had puzzled philosophers for centuries.

Given the common interests of philosophers and physiologists, it should be no surprise that many of the early psychologists, including founders Wundt and James, were both philosophers and physiologists.

The Emergence of Psychology: 1875-1900

Wilhelm Wundt and William James are usually credited with founding psychology, independently, in 1875. A quarter of a century later, in 1900, two other milestones in the history of psychology were passed: the Russian physiologist Ivan Pavlov began to study the learning phenomenon that came to be known as conditioning, and Sigmund Freud published his great work, *The Interpretation of Dreams.* In the 25 years between 1875 and 1900, psychology came into its own.

Wilhelm Wundt was born in a small village in western Germany in 1832. A studious child, he began to study medicine as a young man, probably with the intention of becoming a scientist rather than a practicing physician. He was an active scholar and published extensively in both philosophy and physiology. At one point he was a student of Helmholtz. His main interest, however, was the branch of philosophy that dealt with psychological questions such as perception, attention, and feeling. In 1874 he wrote the first of six editions of *Principles of Physiological Psychology.* Then in 1875, he became professor of philosophy at Leipzig and immediately opened one of the world's first laboratories for psychological research (1879). Within a few years he attracted many students from Europe and America to study with him. He was a popular lecturer with a talent for simplifying his material in order to make it interesting and clear to his audience. By 1881 he had established a psychological journal, which attracted even more students to an interest in psychology.

Wundt is most famous for his interest in introspection, a method of studying consciousness in which subjects report on their subjective experiences. Introspection involves long and difficult training. People were taught to achieve a state of "strained attention," in which they could closely examine their own conscious experience and report the smallest possible elements of awareness. The goal of introspection was to learn about the basic building blocks of experience and report the smallest possible elements of awareness. The goal of psychology was to learn about the basic building blocks of experience and the principles by which they combined to give us our everyday consciousness. Though introspection was not used by many psychologists after Wundt, Wundt's goal to " workout a new domain of science," was achieved. A man of many interests and abilities, Wundt was first and foremost a psychologist.

In 1879, the same year that Wundt opened his laboratory in Leipzig, William James founded psychology in North America at Harvard University. James, the brother of the noted novelist Henry James, was a physiologist, physician, and philosopher whose work touched on every area of psychology.

James was born in 1842. After finishing medical school he took a teaching appointment at Harvard. In 1875 he gave his first course in psychology, noting that the first lecture he ever heard on psychology was his own. He set up a psychological laboratory that same year. In 1889 his title was changed from professor of philosophy to professor of psychology. The next year he published his landmark two-volume text, *Principles of Psychology.* This work remains a highly readable classic with chapters on nearly every psychological topic ranging from vision and the brain to the self and will. It is interesting to note that in his later philosophical writings James distinguished between individuals who were "tough-minded," or scientific, and those who were "tender-minded," or philosophical. His work in psychology was both.

Early school of psychology: Evolutions and Revolutions in psychology

1. Structuralism: A school of psychology founded by wilhelm wundt (1832 - 1920) who opened the first formal psychological laboratory at Leipzig in Germany, in the year 1879. Titchner also contributed to this school of psychology at crowell university in the U.S. Structuralism in brief refers to the images, sensation and feelings which contribute to form experience. It otherwise, deals with the mental structure. The structuralists tented

to ask “what are the parts of psychological process? Structuralism developed and used the technique called introspection. Introspection refers to self – analysis or self – examination or looking within oneself.

2. Functionalism: functionalists such as William James (1869 - 1949) Harvey carr (1873 - 1954), at the university of Chicago proposed that psychology should study “what the mind and behaviour do”. In brief, these early psychologists studied the functions of mind and behaviour. Functionalism addressed the ways in which experience permits us to function more adaptively in our environments; and it used behavioural observation in the laboratory. The functionalists tented to ask “what are the purposes (functions) of overt behaviour and mental process? What differences do they make

3. Behaviorism: behaviorism, a philosophy of psychological study which holds that only observable behavior is the proper subject for psychological investigation. In that year Watson published an article, “Psychology as the Behaviorist Views It,” that revolutionized psychology and made him one of its most important figures. At that time the chief method for studying mental processes was introspection. Watson pointed out that Wundt’s introspective method had a serious flaw. When different people were asked to describe a certain conscious experience, they often disagreed. We can see this ourselves by asking five different people what the conscious experience of happiness consists of. We are likely to get five different answers.

Watson’s solution to this problem was simple and direct- banish the study of consciousness and the introspective method from psychology. Instead, define psychology as the study of behavior and of the ways in which humans and animals learn to adapt to their environments. Watson suggested that psychologists set up various environments in the laboratory and then observe how subjects reacted. In this way, both the environmental stimuli and the subjects’ responses could be objectively described and measured. Instead of asking people to describe happiness, for example, the behaviorist might count the number of smiles or belly laughs while subjects watched an amusing film.

Watson felt that Pavlov’s studies of conditioned reflexes and Thorndike’s studies of learning in cats were both major successes of the behavioral method. By carefully controlling environmental stimuli, both scientists had shown how behavior could be modified in predictable ways. Behaviorism provided a method that made scientific psychology a possibility. Without it, psychology as a science might never have developed. In subsequent years, psychologists flocked to behaviorism’s banner. Research on conditioning and learning flourished. Some psychologists developed elaborate theories of learning, while others applied behavioral methods of problems in education, child development, social psychology, and mental illness.

4. Gestalt psychology: This school was founded in Germany about 1912 by max Wertheimer (1880-1943) and his colleagues Kurt Koffka (1886-1941) and Wolfgang KohlerThe German word gestalt means “forms” or “configuration” and the gestalt psychologists maintained that mind should be thought of as resulting from the whole patterns of sensory activity and the relationships and organizations within this pattern. For example when look at the dots in the figure given below, your mental experience is not the just of the dots, or elements but of a square and a triangle. It is the organizations of the dots and their relationships that determine the mental experiences you have. Gestalt psychologists stated that mental experiences depended on the patterning and organization of elements. In other words, the mind is best understood in terms of the ways elements are organized.

According to Gestalt psychologists the organization and relationships of elements determine the mental experience a person has.Gestalt psychologists believed experiences cannot be broken down to separate elements. Gestalt psychologists laid their basis on perception, and believed that perception is a copy of objects or a “mental image” of what has been perceived and thinking is a mechanical combination of those images.

Gestalt is not a name of person, instead it is a school of psychology that behaviour cannot be studied in parts but must be viewed a whole. Parts make the whole or the whole is more important than than the parts. That is, the overall behaviour or the total experience of the individual is important than the mere reflexes. The whole is more than the sum of the parts. Whole experience is essential, and the total experience is evaluated. For instance, there is a difference between if I tell you “come to my house” and “come home”. House here merely refers to the parts-the tables, chair or the building but home includes the people at house and they really want you to visit them. It is a holistic approach.

Wertheimer and his colleagues focused on perception and on how perception influences thinking and problem solving. Perceptions were more than the sum of their parts. Gestalt psychologists saw our perceptions as whole that give meaning to parts.

Gestalt psychologists illustrated how we tend to perceive separate pieces of information as integrated wholes, including the lowest in which they occur For instance the symbol in second column at the above is identical, but in the top row, we may perceive it as B and in the bottom row as number 13. The symbol has not changed, only the context in which it appears has changed.

The method used in Gestalt psychology is Introspection Method. Gestalt psychology, too had its criticism like, the responses may be biased, prejudiced, subjective, not consistent and not always reliable and valid. Thus exercising Gestalt psychology required rigorous training and practice.

5. Psychoanalysis*:* This highly influential school emerged in Vienna under the leadership of Sigmund Freud. As a neuro-physician Freud was puzzled with the suffering of his patients from mental conflicts that were manifested as physical disorders. He found that hypnotizing the patient and allowing him to talk out the problem was helpful in relieving the trouble-some experiences. He used hypnosis and free association, in which the patient freely told whatever came to his or her mind. To him dreams were of special significance as they revealed hidden wishes and provided access to unconscious processes. He developed the concepts of id. ego and super ego to analyze personality structure. He considered human mind in terms of conscious, preconscious and unconscious processes. His work has also influenced the study of child rearing, personality development and unconscious motivation. Alfred Adler and Carl Jung were associated with Freud during early phase but later on developed their independent schools of thought. Neo Freudians like Fromm, Sullivan, Horney, and Erikson have modified and extended the ideas of Freud by attending to ego functions and the demands of social reality.

Current Status of Schools

The schools of psychology described above are historically important. There are no more schools in any orthodox sense. Today psychologists in different fields are using the ideas and assumptions rooted in diverse schools of thought. Their focus has now shifted from psychology as a whole to the development of special fields focusing on specific themes and sub themes,

The Cognitive Revolution: transition period

During the years following the Second World War a number of forces converged and paved the way for a major change in the perspective, amounting to an academic revolution. Psychologists were impressed by communication engineering. The idea that human beings are limited capacity processors of information proved very attractive. The resulting information processing approach assumed that a mental process can be understood in terms of the flow of information through a series of stages. Jean Piaget in Switzerland studied cognitive development of children. He considered human beings as active interpreters of information using schemas. In England Frederick Bartlett was studying memory and found that long-term memory is not a passive process. People actively interpret events and their memories often change over time.

The complexity of human languages challenged many of the prevailing notions. Chomsky proposed that there is an implicit system of rules underlying people's language abilities. These rules help speakers to construct, and listeners to understand the sentences that are allowed in the language. Chomsky rejected the behaviorist approach to language acquisition and clearly indicated the inborn ability to master language.

All these developments culminated in emergence of a new orientation named cognitive view. The conference at Massachusetts Institute of Technology was seminal to it. The direction provided by this conference in 1956 gave birth to human information processing model of cognition. It was considered possible to study mental processes scientifically within the framework of modern cognitive psychology. And in the process, psychology once again returned back to the study of mind as an important subject matter.

Trends in 21st century

The developments in contemporary psychology showing advances in theory and application are wide raging. The various schools, which were propagating one or the other paradigm, are no more operating as alternatives. They don't exist as mutually exclusive. With maturity the range of concerns has widened and critique and reconstruction of psychological theories are going on. The cultural context of psychological processes is being recognized. It is realized that the psychology based on the Euro-American ideals of individualism and capitalism is flawed. It was good at a time when industrialization was the key agenda. Today the developed countries are moving towards information age. The emerging post-industrial societies demand interdependence and sharing. The developing countries are also repositioning themselves by striking a balance between local realities and global concerns. These developments are posing new and exciting challenges before psychologists.

Major Perspectives within Psychology

Psychology has come a long way in the century or so since the early efforts of Wundt, James, and Hall. It has gone beyond asking broad philosophical questions about human nature and abilities and has developed into a science. But even today, psychologists have different philosophical perspectives on their work. They have different ideas about the nature of humanity, the nature of science, and the topics and methods that psychologists should emphasize. For example, some psychologists believe we should only study behavior and leave "the mind" to philosophers. Others think that we must study human experience and feeling even if these are more difficult to observe and measure than action and reaction. In this section we will introduce the major perspectives in the field of psychology. We will explain the philosophical assumptions underlying each approach and how these approaches developed. The five perspectives we will consider are the biopsychological, psychodynamic, behavioral, humanistic, and cognitive approaches. Before we consider each perspective individually, there are a few general considerations that you should keep in mind. First, to a large degree, the perspectives are related. Often the limitations of one perspective have led to the creation of another. Then, at a later time, interest in the older perspective is frequently. Second, no single perspective is considered dominant or correct. Many psychologists incorporate the view of several perspectives into their thinking. Different perspectives may be more useful at one time than at another, but they all have something important to offer. It may be more productive to think of each perspective as a special vantage point for studying the complex puzzle of behavior and mental processes.

1. The Bio-psychological Perspective

As the name implies, biopsychology is really a combination of disciplines. It combines physiology, especially the physiology of the brain, with psychology, the study of mental processes and behavior. The underlying assumption of biopsychology is that for every behavior, feeling, and thought, there is a corresponding physical event that takes place in the brain. The goal of biopsychology is to understand the relationship between these two realms.

What changes occur in the brain during learning? What happens to the chemistry of the brain in mental illness? How do drugs such as Valium act on the brain to produce their tranquilizing effect? What happens in the brain when a person commits a violent act? These are the kinds of questions bio psychologists address. Similarly, bio psychologists want to know why stimulation of certain areas of the brain causes rats that have just been fed to eat again, whereas surgery in other areas of the brain induces animals to starve to death even though food is available. They want to understand why certain brain operations cause previously aggressive monkeys to become tame and docile.

We may recall Hippocrates' interest in the relationship between the brain on the one hand and behavior and consciousness on the other. After Hippocrates, the study of these questions was largely ignored until the eighteenth century. This was partly due to religious dogma that insisted that the body was separate from the mind or soul. Since the eighteenth century, however, biospychologists have once again pursued the remarkable insights of Hippocrates and have made dazzling discoveries about the functioning of the brain. Although much of their research has been conducted on animals, some of the most intriguing studies have involved surgery on the human brain, conducted in a daring effort to help patients with severe brain disorders.

In addition to operating on the brain in order to change behavior, bio psychologists also study the changes that occur in the brain during certain behaviors. For example, they have identified electrical changes that occur in the brain during the learning process. They have also found that different patterns of electrical activity occur during relaxation, sleep, and waking. Still other researchers have found that certain drugs can control the symptoms of schizophrenia, suggesting that biochemical activity in the brain is related to schizophrenia. And recently, Roger Sperry was awarded the Nobel prize for his work on the split brain. His research suggests that the two halves of the brain perform different functions.

To be sure, we are a long way from a complete understanding of the relationship of the brain to human behavior and mental processes. Indeed, the complexity of both the brain-with its billions of cells-and human behavior makes this a tall order. Nevertheless, the bio psychological perspective holds great promise for understanding behavior and perhaps bettering the human condition.

2. The Psychodynamic Perspective

The underlying assumption of psychodynamic psychology is that unconscious forces have important influences on human behavior. Although the psychodynamic perspective is made up of both Freudian and non-Freudian theories, it actually grew out of the work of Sigmund Freud and his followers, called neo-

Freudians. Freud's work is known as psychoanalytic theory. Psychoanalysis is the term Freud used to describe his psychological theories and his method.
Freud's ideas are consistent with philosophical viewpoints that see human beings as irrational and motivated by biological drives, not all of which are noble. His central assumptions were that human beings are born with unconscious drives that seek some kind of outlet or expression from the very start. Many of the drives that young children have, violate social conventions for proper behavior. For example, young children often enjoy smearing feces, masturbating, or hitting their playmates. Parents will typically forbid these behaviors and punish their children for performing them. As a result of these restrictions, many innate drives are repressed, that is, pushed totally out of conscious awareness.

An important idea in psychoanalytic theory is that repressed drives continue to demand some kind of expression or satisfaction. Since they cannot be expressed in behavior or even admitted into consciousness, they will be manifested indirectly. For example, Freud felt that many drives for socially unacceptable behavior were sublimated, that is, channeled into some kind of approved or even highly praised behavior. He argued that the highest achievements of civilizations, including painting, music, and architecture, were motivated by sublimated drives. Thus, a young man's drive for a forbidden intimate relationship with his sister may lead him to marry a women who closely resembles his sister. Similarly, dreams or slips in speech or memory may indirectly express repressed drives. For instance, sexual drives are often expressed in dreams. Hostile feelings may be expressed by forgetting a meeting with someone you do not like or whom you fear.

Freud was particularly interested in analyzing psychological disorders, and his writings stress the way parental treatment of children's behavior can lead to problems. At the same time Freud was quite optimistic about the power of psychological treatment to relieve psychological disorders. His goal in treatment was to make the patient aware of his or her own unconscious feelings. In this way, patients would understand themselves better and would be freer to choose effective responses to the problem they face.

Freud continued to refine and develop his theories throughout his lifetime. His ideas address human motivation, personality, personality development, psychological disorders, and methods of psychotherapy. Because his theories were based on the assumption that human nature is rooted in unconscious, and some feel, ignoble drives, Freud's theories spurred much controversy.

The development of Freud's theories is itself an interesting story. As a young physician Freud became interested in patients with physical symptoms that seemed to have a psychological basis. One such patient was a woman called Anna O., whose symptoms included occasional paralysis of her limbs, nausea, and speech disturbances. Freud and a colleague, Josef Breuer, found that when Anna O. was under hypnosis she was able to speak much more freely about intense emotional experiences. The expression of these emotions seemed to provide a catharsis, that is, a cleansing or reduction of a feeling through the expression of that feeling, and led to a dramatic improvement in Anna O.'s physical symptoms.

Freud was fascinated with hypnosis and the "talking cure" and pursued it vigorously. He soon discovered an alternative to hypnosis---free association, a method in which the patient learns to discuss embarrassing or painful thoughts simply by reporting whatever comes to mind. Freud also found that it was useful to have patient's free associate about their dreams. Freud and the patient could then begin to unravel the tensions that were being expressed, often in disguised form, in these dreams.

Using the techniques of free association and dream analysis, Freud began to explore how forgotten or unexpressed emotional experiences might relate to patients' symptoms. He believed that critical problems for many patients were related to sex. Few people supported Freud in these ideas, but he continued developing them in his own self-analysis, for which he used his dreams as an important tool. In 1890, the same year that Pavlov began to study conditioning, Freud published his major work, The Interpretation of Dreams. In that book we see the origins of Freud's theories of human functioning, which would eventually fill 23 volumes. His theories not only have tremendous influences in psychology, they have influenced our culture as a whole. Because of Freud's influences most educated people today believe that dreams reflect unconscious wishes, that slips of the tongue express hidden feelings, and that jokes betray hostile feelings. Similarly, we often assume that our feelings toward member of the opposite sex are related tour feelings about our mothers and fathers and that repressed childhood sexual feelings are responsible for sexual difficulties in adulthood. These ideas permeate our culture and strongly influence our interpretation of drama, literature, and the overall condition of society. They are a direct reflection of Freud's writings.

3. The Behavioral Perspective

The behavioral perspective emerged in part as a reaction to Wundt's method of introspection. Behavioral psychologists felt that studying consciousness through introspection was too unscientific. The key assumption

of behavioral psychology is that if psychology is to be a science, it must study only that which is observable – namely, behavior. The followers of this perspective define psychology as the science of behavior and leave consciousness and other unobservable phenomena to the field of philosophy. Behavioral psychologists study behavioral response and the way these response are influenced by stimuli in the environment.

The behavioral perspective has its roots in the work that Ivan Pavlov began at the turn of the century. Pavlov was born in Russia in 1849, the son of a village priest. He was a promising student who studies animal physiology before attending medical school. Pavlov was, in his time, the most successful physiologist in Russia and made important advances in the study of digestion. His work on digestion was important enough to win him a Nobel Prize in1904.

Pavlov discovered one of the most important findings in the history of psychology quite by accident. Pavlov had implanted a tube in the saliva ducts of a dog in order to collect the measure saliva for a study on digestion. In order to stimulate such secretions, Pavlov gave meat powder to the dog. He soon discovered that the dog often began salivating before it actually received the meat powder. In fact, Pavlov noted that the dog would begin salivating when it heard Pavlov or his assistant walking down the hall toward the laboratory. Pavlov observed that the dog associated stimuli such as footsteps coming down the hall with the meat powder. By their association with meat powder, these other stimuli acquired the power to elicit salivation. Pavlov called this phenomenon as the *conditioned reflex*.

At first Pavlov was unsure whether to pursue conditioned reflexes. He believed that an independent science of psychology was "completely hopeless," and he recognized that association and conditioning were psychological matters. However, in 1900 he decided to study conditioned reflexes for the remainder of his career, always holding that he was investigating the structure and physiology of the brain and simply using these unique responses as a tool.

A second important contribution to the behavioral perspective was the work of Edward Thorndike who was one of William James' brightest students. In 1898, at the age of 24, Thorndike published a famous paper on learning in cats based on experiments he conducted in James' basement. Thorndike found that when certain behaviors were rewarded with food, the cats were more likely to repeat them in similar circumstances later on. Behaviors that were not rewarded were less likely to be repeated. On the basis of these findings Thorndike proposed the *law of effect*, which holds that when a behavior is followed by satisfaction it is "stamped in," and when it is not followed by satisfaction it is "stamped out." Thorndike's work dominated debate in the field of learning for half a century (Hilgard, 1956). The idea that the consequences of behavior, reward or punishment, are critical in determining future behavior remains vitally important today in the work of B.F. Skinner and other modern behavioral psychologists.

A third important figure in the development of the behavioral perspective was John B. Watson, a professor of psychology at Johns Hopkins University. Stimulated by the work of Pavlov and Thorndike, Watson launched in 1913 what is known today as behaviorism, a philosophy of psychological study which holds that only observable behavior is the proper subject for psychological investigation. In that year Watson published an article, "Psychology as the Behaviorist Views It," that revolutionized psychology and made him one of its most important figures. At that time the chief method for studying mental processes was introspection. Watson pointed out that Wundt's introspective method had a serious flaw. When different people were asked to describe a certain conscious experience, they often disagreed. We can see this ourselves by asking five different people what the conscious experience of happiness consists of. We are likely to get five different answers.

Watson's solution to this problem was simple and direct- banish the study of consciousness and the introspective method from psychology. Instead, define psychology as the study of behavior and of the ways in which humans and animals learn to adapt to their environments. Watson suggested that psychologists set up various environments in the laboratory and then observe how subjects reacted. In this way, both the environmental stimuli and the subjects' responses could be objectively described and measured. Instead of asking people to describe happiness, for example, the behaviorist might count the number of smiles or belly laughs while subjects watched an amusing film.

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4. The Humanistic Perspective

Just as the behavioral perspective developed as a reaction to introspectionism, so the humanistic perspective has developed over the last several decades as a reaction against perceived shortcomings in the psychoanalytic and behavioral perspective. The argument is that these two perspectives have theoretical elegance and impressive explanatory power, but that the *person* seems to get lost. Individuals are dissected into conditioned responses or unconscious drives while the whole human being- his or her feelings, experience, needs, and problems-seems to be pushed aside. This concern given rise to a "third force," called humanistic psychology, which emphasizes the whole person and the importance of each person's subjective experience.

Perhaps the central concept in humanistic psychology is the need for self-actualization. While recognizing that many motives affect behavior, humanistic psychologists believe the most important is the underlying needs to develop our full potential. Freedom is another key concern in humanistic psychology. According to behavioral psychology, people's actions are determined by the external environment. In psychoanalysis, people are largely governed by unconscious, internal drives. Humanistic psychology rejects the emphasis on these internal and external determinants of actions. Instead, it emphasizes the fact that people can choose, and that if society gives them more freedom, people will ably and gladly takes responsibility for their own lives and make the best of them. Humanistic psychology also assumes that inner goodness in all human beings.

If it is true that people are inherently good, active, and responsible, and if they really strive towards self-actualization, why are so many people aggressive, frightened passive, and dissatisfied much of the time? Humanistic psychologists feel that the structure of society – its pressures and its restrictions – accounts for these problems. Consequently, people need help in discovering themselves and in starting on the path towards self-actualization. For this reason, many humanistic psychologists were active in the encounter group movements of the 1960s and early 1970s. An encounter groups is a form of group interaction that emphasizes becoming aware of one's inner feelings and experience, taking responsibility for one's life, and pursuing life actively and productively. According to humanistic psychologists, honest communication and the sharing of feelings and experience in encounter groups facilitates the self-actualizing tendencies within each of us.

Two important figures in humanistic psychology are Abraham Maslow and Carl Rogers. Maslow is known for his comprehensive hierarchical theory of motivation. This theory emphasizes that basic motives such as the need for food, water, safety, and affection must be satisfied before people can develop their potentials (Moslow, 1954). Rogers (1961) has written extensively about how people can become themselves and how they can relate to others in helpful and constructive ways.

5. The Cognitive Perspective

One of the newest trends in psychology is the intensive study of cognition, a broad term that refers to the ways we process or transform information about the world around us. Cognition includes the mental processes of thinking, knowing, perceiving, attending, remembering, and the like. The cognitive approach developed as a reaction to the behaviorists' exclusion of mental life and consciousness from their definition of psychology. It has its roots in Wundt's Introspectionism and, before that, in Aristotle's ancient writings on image and experience. Cognitive psychology is the psychological perspective that is primarily concerned with mental processes or cognitions. Cognitive psychologists want to know how we organize, remember, and understand everything we experience. For example, how do we turn the small lines of ink on this page into meaningful sentences? How do we translate the sound waves produced by a friend into the complex questions and statements that are a part of adult conversations?

Cognitive psychologists view human beings as extremely active processors of information. Cognitive psychologists Ulric Neisser states that "whatever we know about reality has been acted on…by complex systems which interpret and reinterpret sensory information". The goal of cognitive psychology is to specify the mental processes involved in this interpretation and reinterpretation. For example, line of research, cognitive psychologists have used the computer to try to duplicate the features of human memory and problem solving (Kotovsky & Simon, 1973) in order to develop a model of how humans reason. To do this, researchers must produce a computer program that solves problems in the same sequence human do.

How do cognitive psychologists study human behavior? Frequently they create small experimental tasks that allow them to determine how past experience influence the way people think. For example, in one classic experiment subjects were given the objects pictured in a box of candles, a box of matches, some string, and some thumbtacks (Duncker, 1945). The subject's task was to mount the candle on a wall vertically, using any of the objects they were provided with. Subjects typically had a difficult time solving this problem because they could not think of novel uses for the objects. One aspect that contributed to the task's difficulty was that

the matches were presented in a box. This made subjects regard the box as a, rather than as a potentially important element in solving the problem.

What this brief experiment demonstrates is that the ways people think about objects is strongly affected by the ways they have thought about them in the past. The old ways can make it difficult to think in new ways. How people overcome familiar ways of thinkng and devise creative solutions is psychologist's central concerns.

Like the other approaches to psychology, the cognitive perspective has been applied to helping people overcome psychological problems. For example, a cognitive therapy known as rational-emotive therapy (Ellis & Harper, 1975) emphasizes exactly the difficulty seen in the matchbox problem we just discussed becoming trapped by old, familiar ways of thinking. Sometimes people have irrational beliefs which adversely affect their entire view of themselves and their relations with others. Cognitive therapies emphasize changing these irrational beliefs so that people can achieve greater self-acceptance and improved interpersonal functioning.

APART FROM THESE, THERE ARE SOME OTHER PESPECTIVES LIKE: Developmental, Socio-cultural, evolutionary, etc. which also provide important frameworks for the understanding of behavior and mental processes.

Psychological Settings and Specialties

Although psychologists do many different kinds of work in many different places, we can make on basic distinction between types of psychological endeavor. For the most part, psychologists are involved either in a combination of teaching and research in an academic setting, or in putting theory and research into practice in various settings such as schools, hospitals, clinics, and businesses.

Fields of Psychology: Modern Nomenclature

Contemporary psychology is made up of many specialized sub-fields, each with its specific subjects matter, theories and methods. Some of the major areas of psychology are mentioned below. Remember, these details are not exhaustive since many new areas are also emerging.

Biological psychology *Also called physiological* ***psychology*** *or behavioral* ***neuroscience*** the study of the physiological bases of behavior. Biological psychology is concerned primarily with the relationship between psychological processes and the underlying physiological events—or, in other words, the mind-body phenomenon. Its focus is the function of the brain and the rest of the nervous system in activities (e.g., thinking, learning, feeling, sensing, and perceiving) recognized as characteristic of humans and other animals. Biological psychology has continually been involved in studying the physical basis for the reception of internal and external stimuli by the nervous system, particularly the visual and auditory systems. Other areas of study have included the physiological bases for motivated behavior, emotion, learning, memory, cognition, and mental disorders. Also considered are physical factors that directly affect the nervous system, including heredity, metabolism, hormones, disease, drug ingestion, and diet.

Theories of the relationship between body and mind date back at least to Aristotle, who conjectured that the two exist as aspects of the same entity, the mind being merely one of the body's functions. In the dualism of French philosopher René Descartes, both the mind and the soul are spiritual entities existing separately from the mechanical operations of the human body. Related to this is the psychological parallelism theory of German philosopher Gottfried Wilhelm Leibniz. Leibniz believed that mind and body are separate but that their activities directly parallel each other. In recent times behaviorists such as American psychologist John B. Watson moved away from consideration of the spiritual or mental and focused on observable human and animal behaviours and their relationship to the nervous system.

Developmental psychology *Also called Life-****span Psychology,*** *the* branch of psychology concerned with the changes in cognitive, motivational, psychophysiological, and social functioning that occur throughout the human life span. During the 19th and early 20th centuries, developmental psychologists were concerned primarily with child psychology. In the 1950s, however, they became interested in the relationship between personality variables and child rearing, and the behavioral theories of B.F. Skinner and the cognitive theories of Jean Piaget were concerned with the growth and development of children through adolescence. At the same time, the German psychologist Erik Erikson insisted that there are meaningful stages of adult psychology that have to be considered in addition to child development. Psychologists also began to consider the processes that underlie the development of behaviour in the total person from birth to death, including various aspects of the physical-chemical environment that can affect the individual during the intrauterine

period and at birth. By the latter part of the 20th century, developmental psychologists had become interested in many broad issues dealing with the psychological process throughout life, including the relation of heredity and environment, continuity and discontinuity in development, and behavioral and cognitive elements in the development of the total person.

Cognitive Psychology Cognitive psychology deals with how individuals acquire, store, transform, use, and communicate information. It covers our mental life. The major cognitive processes are: attention, perception, pattern recognition, memory, reasoning, problem-solving knowledge representation, language and decision-making. In everyday life we are constantly engaged in these processes. Many of them occur simultaneously or in close succession. In order to understand them cognitive psychologists conduct experiments in laboratory settings. Also, there is an ecological approach, which uses naturalistic observation. Cognitive psychologists often collaborate with neuroscientists, and computer scientists.

Comparative-physiological Psychology comparative psychology deals with the study of similarities and differences between the behavior of various animals. The major issues in the area include heredity and behaviour genetics, evolution of behaviour, neural bases of behaviour, central nervous systems, neuro-psychology, the autonomic nervous system, endocrine system, states of consciousness, sleep and dreaming, and the psychological effects of drugs. Neuropsychology and psycho-pharmacology study the psychological effects of drugs on mental life and behavoiur.

Abnormal Psychology Mental health problems are widespread in contemporary societies. Abnormal psychology seeks to describe, explain, predict, and control behaviour that are considered strange or unusual. It's main focus is on classification, etiology, assessment, treatment, and prevention of mental disorders. Abnormal behaviour is one that departs from some norm and harms the affected individual and or others. Its subject matter encompasses a range of behaviours from the bizarre and spectacular to the more commonplace—from the violent homicides and perverted sexual acts to behaviours such as stuttering, anxiety, and depression. Psycho-diagnosis attempts to describe, assess, and draw inferences about a person's psychological disorder. It is important for treatment. Abnormal behavior can be understood in different ways. One may view abnormality in terms of behaviours that occurs least frequently in the population. In practical terms abnormality is defined on the basis of discomfort, either physical or psychological, suffered by the affected person, the bizarreness of the person's actions, and inability to play various roles. Perhaps a single criterion of abnormality is not enough. One has to take into account-combined perspectives of society, the individual, and the mental health professional.

Clinical and Counseling Psychology Clinical psychologists are professionally trained practitioners in the domain of diagnosis and treatment of psychological disorders. They also investigate the causes of these disorders. A large number of clinical psychologists are employed in hospitals, clinics, and are pursuing private practice. They work closely with psychiatrists in treating people with serious psychological in treating people with serious psychological disorders. Counselling psychologists usually help those with mild problems of social and emotional adjustment. Some counselling psychologists work in specialized areas like family, marriage, and career.

Cross-Cultural and Cultural Psychology It is the study of the ways in which social and cultural forces shape human behaviour and are also shaped by human behaviors. It assumes that human behaviour is not only a reflection of human biological potential but also a product of culture. It is argued that in order to fully appreciate and understand, behaviour should be studied in its socio-cultural context. Culture and behaviour are interdependent. Culture influences human behaviour in many ways and in different is degrees.

Educational and School Psychology This field is concerned with all aspects of learning process. The factors influencing performance in the classroom, and evaluation of student performance are investigated. The school psychologists try to apply psychological knowledge in school setting. Teacher training, student counselling and helping children overcome their learning difficulties are important activities undertaken by educational psychologists. Special education has become a significant area in terms of providing education to children with various types of handicaps.

Environmental Psychology This field focuses on the interaction between the physical world and human behaviour. Environmental stressors like noise heat, humidity, pollition, and crowding, are studied, Also physical arrangement of the work place, its influence on ability to work, emotional state 3, health and interpersonal behaviour are investigated. In recent years disposal of waste, alteration in climate, nuclear energy, population explosion, consumption of energy, use of community resources, and littering are becoming serious problems. An environmental psychologist address these and related issues systematically.
Health Psychology This field explores the relationship between body and mind. The mind plays impotent role

in many physical diseases ranging from ulcers, heart disease to common cold and cancer. As a field of study health psychology specializes in the study of how psychological factors influence the origin, prevention, and testament of physical illness, health psychologists are contributing to modern health care and disease prevention. They try to understand how psychological factors (e. g., stress, hostility) can have harmful physical effects. The causes of unhealthy behaviors such as smoking, ignoring early symptoms of a disease, and overeating etc. are studied. They also try to understand the psychological strategies for coping with illness.

Industrial and organizational (I/O) Psychology It Is one of the popular branches of psychology that applies the principles of psychology to the work place. Thus the principles of social psychology are used to promote leadership, and motivate the employees. Similarly the principles of learning are used to run training programs. It tries to investigate the factors that affects the people working in an organization. By increasing the effectiveness of employee it reduces the cost of products and improve the quality of life. Some of the I/O psychologists focus on personnel psychology. They are interested in employee selection, job analysis, performance evaluation, and absenteeism. Those interested in organizational psychology deal with the issues like leadership, employee motivation, conflict management, group processes, and organizational change. Some of them are interested in training and development. There are also psychologists who are devoted to human factors. They try to design work place, human machine interaction, and reducing physical fatigue and stress.

Life Span Developmental Psychology This field focuses on the development of perception, cognition, language, skills, personality, and social relationship. It is related to psychological phenomena of all kinds among infants, children, adolescents, adults, and the aged. Infact they study the changes in physical and psychological domains that occur in people throughout the life cycle. They describe and explain the systematic changes that occur during the life course. They investigate how biological inheritance and particular experiences influences psychological characteristics such as intelligence, temperament, and social relationships.

Social Psychology Social psychology attempts to understand the nature and causes of individual behavoiur and thought in social situations. It's interest lies in understanding the factors that shape the action and thoughts of individual human beings within social settings. The factors influencing social behaviors are many. Some of them are behaviors and characteristics of others, basic cognitive processes, ecological variables, cultural context, and biological factors. Social psychologists study attitudes, conformity and obedience to authority, interpersonal attraction, attribution processes, group processes, social motivation, intergroup relations, and so on.

Psychological Assessment This is one of the most important areas of psychological applications. Measurement of aptitude, intelligence, personality, attitudes, values and many other psychological characteristics are useful in research, providing guidance to people, and selecting and training people for various jobs in different organizations. Assessment of human competencies in different domains is becoming a major focus of applied work and many new methods are being developed to achieve this goal. For instance, Assessment Centers and Dynamic Testing methods provides better ways to provide the profile of the people being tested.

Other Fields Apart from the above specializations there are many new areas that are emerging like aviation psychology, military psychology, forensic psychology, rural psychology, engineering psychology, personnel psychology, behaviour medicine, managerial psychology, peace psychology, sports psychology, community psychology, psychology of women, political psychology, work psychology, and neuro psychology. There are departments where full-fledged Master's and Ph.D. level courses are run in specialized areas. Books, scientific journals and professional bodies support teaching, research and applications of psychology in specialized areas.

Emerging Fields of Psychology [trends in 21st century. Psychology and scientific method]

The discipline of psychology is growing very fast in many directions. Its theoretical and methodological concerns as well as commitment to applications for improving the quality of life have widened to encompass many domains of human life. It is almost impossible to keep track to the voluminous research publications in the field. Researcher are showing increasingly greater interest in studying biological, social, cultural, cognitive, community, and health related issues. In each and every area new ideas and findings are coming up and it is difficult to provide even a comprehensive sample of these developments.

However, some major trends and themes may be deciphered. The new developments in psychology are characterized by the following trends:

- The study of psychological issues is becoming a multi-disciplinary endeavour.
- The developments in the sub fields of psychology are showing increasingly greater degree of specialization.
- The complexity of reality in human life requires use of multiple methods rather than single method.
- The role of culture in constituting as well as understanding psychological reality is being realized.
- Meaning, emergent properties of behaviour, cognitive flexibility, developmental context, and situatedness in the socio-cultural context make human science a more appropriate model for psychology than the physical science model.

- Looking at these developments we find a very exciting scenario within the discipline of psychology. In order to have a glimpse of the developments that are taking place a sample of some recent works is presented. They, however, do not exhaust the kinds of activities that are taking place.

Neuropsychology: In this emerging field researcher are interested in understanding the functioning of intact brain as its relates to mental functions. Advances are being made in many directions. One of the new areas is the study of neural communication. Researchers are uncovering the working of neurotransmitters-a kind of chemical, which are responsible for neural communication. At present we know about 40 such transmitters. One category of transmitters is called monoamines. They play an important role in emotion, movement, learning and memory. Another type of transmitters is acetylcholine, which is important for memory. Still another, Gamma aminobutyric acid called GABA, is the major inhibitory transmitter. It is important for emotion, anxiety and arousal. Then, we have endorphins, which regulate pain, and pleasure. These neurotransmitters are found in different parts of brain particularly limbic system, thalamus, brainstem, and frontal cortex. Knowledge of mystery of mental function., helping to fight with various diseases and enhancing the well being of the people.

Non-Conscious Mental Systems: Many researcher are exploring the role of mental processes, of which we are not aware, in behaviour. It appears that most a person's everyday life is determined not by conscious intentions and deliberate choices but by mental processes that are put into action by features of the environment and that operate outside of conscious awareness. Regulating one's own behaviour, taking non-conscious or automatic processes are unintended, effortless, and fast. Several of them can operate at any given time. Automatic self-regulation involves one third less effort than what is required in regular thinking. It has been found that some of that automatic guidance systems are natural and don't need experience to develop. Other develop out of repeated and consistent experience. Studies show that mental representation that are involved in non-conscious processes do not care about the source of their activation. The mechanisms of automaticity in behaviour provide an important challenge for researcher.

Positive Psychology: There has been a growing interest in topics like hope, optimism, happiness, and flow. Taken together these construct deals with the positive side of human existence. Optimists are the people who expect to have positive outcomes, even when things are difficult. This yields a mix of feelings that is relatively positive. It is positively related to coping, health, and advancement. Happiness is a enduring positive emotional state that includes satisfaction with one's life and self as well as active pleasure and accomplishments. It has been noted that spending time with loved ones, seeking challenging and meaningful work, helping others, keeping physically fit, and thinking positively are a key to happiness.

Flow is a state of unselfconscious concentration, in which one focuses on a task or activity while loosing track of time. When a person's relevant skills are needed to cope with the challenge of a situation, that person's attention is completely absorbed by the activity. As a result, one of the most distinctive features of optimal experience takes place: people become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the action they perform. The key element of an optimal experience is that it is an end in itself. It's a self-contained activity. Its experience is intrinsically rewarding. It lifts the course of life to a different level. A dancer, a rock climber, a chess player, and a user of computer, a mother spending time with the small daughter all report a seemingly effortless movement or flow. By being in flow one can cast off the shackles of mortal existence, because no matter what has happened in past, and regardless of what awaits you in the future, you can be in flow now.

Ethical Principles of Psychologists

As we have stated, the goals of psychology are to describe, explain, and predict behavior and to use this knowledge to promote human welfare. In pursuing these goals psychologists subscribe to a number of ethical principles. As you read about psychological study and consider how you might use psychological knowledge, you should keep these ethical principles in mind.

The psychologists' general ethical position is stated in the preamble of the American Psychological Association's statement of ethical principles. This preamble reads, in part, as follows:

Psychologists respect the dignity and worth of the individual and strive for the preservation and protection of fundamental human rights. They are committed to increasing knowledge of human behavior and of people's understanding of themselves and others and to the utilization of such knowledge for the promotion of human welfare. While pursuing these objectives, they make every effort to protect the welfare of those who see their services and of the research participants that may be the object of study. (APA, 1981)

Among the ten specific principles declared by the APA, three are worth special mention. First, psychologists have an obligation to protect the confidentiality of information provided by others. This applies to information provided by persons seeking counseling or psychotherapy, to people who are studied in their place of work, to students, and to participants in psychological research. Second, a more general principle protects the rights of persons who participate in psychological research. This principle states that such research must always consider both the benefits to society and the dignity and welfare of the subjects themselves. There is a specific obligation to determine the advantages of and alternatives to any concealment of the purposes of an experiment or to any deception.

The principle of protecting the rights of persons who are research participants states that psychologists must consider the benefits of their studies. What are some of the practical benefits that have been derived from psychological research? The APA recently presented to Congress some of the benefits to society that have come from psychological research. A number of these benefits are quite interesting. For example, the application of research on perception has benefited aviation safety by helping pilots learn to recognize common optical illusions. This has contributed directly to a decrease in airplane accidents. Second, applications of research on personality and assessment have contributed to improved objective techniques of personnel selection in business. Third, techniques for changing attitudes and behavior have been applied to many health issues. Such techniques have helped people with high blood pressure changes their diets. Other benefits include measuring consumer sentiment, motivating school children, and suggesting less stressful physical environment in hospitals.

The third ethical principle deserving special comment concerns the care and use of animals in psychological research. There has been a great deal of discussion about using animals in behavioral research during the past several years. This discussion falls within the larger consideration of the use animals in science and medicine. For example, in 1984 there was prolonged controversy about the morality of transplanting a baboon heart into the human infant known as Baby Fae. That same year psychologists at the annual APA convention considered in great detail the ethics of research with animals. Psychologists pointed to the numerous contributions made through animal research- including studies pertaining to the rehabilitation of people suffering from stroke, anxiety control without drugs, and the use of biofeedback to reduce high blood pressure and the risk of heart attack (APA, 1984). The APA mandates that psychologists who conduct research with animals safeguard the health, comfort, and humane treatment of their animal subjects. Furthermore, psychologists must make every effort to minimize the chances of pain, illness, or discomfort in the animals. In short, the APA strongly believes that research with animals is necessary in order to make scientific progress and to benefit the human condition, but it insists that such research be conducted as ethically and humanely as possible.

With psychology's emphasis on helping human beings, it may seem odd that conducts so many experiments on animals. The reasons for using animals are actually good ones. There are many similarities between human and animals behaviors. Researchers can, however, manipulate the environments of animals in ways that would be repugnant and unethical for human subjects. Similarly, researchers can perform physical experiments on animals and gain much knowledge about the working of the brain.

There are tremendous benefits to be derived from psychological research. Still, such research must always be conducted with the welfare of both human and subjects carefully safeguarded.

We noted earlier that most psychologists today are practicing psychologists rather than research psychologists. This simple fact makes it clear that psychology not only can be applied, but that it is being

applied, every day. Most of the practitioners of psychology are involved in the effort to alleviate psychological disorders and improve personal functioning. The range of techniques that therapists use and the number of psychological disorders they treat are ample evidence of the wide applicability of psychology. But in addition to clinical uses, psychology has been widely used in other settings. Here we mention just a few of them in order to give our an understanding of the many ways that psychological application affects everyday life and the range of psychologically related activities with which you might want to get involved in the future. Even if you do not pursue a career in psychology, psychology will touch your life in many ways.

Application of Psychology

Research in psychology, as in all fields of sciences, has two focuses of interest basic and applied research.

Basic research is concerned with the quest for knowledge regardless of whether it has immediate practical value. Psychologists who study learning in the laboratory may not be concerned with improving teaching methods, although their findings may eventually have application in education. They aim at satisfying their curiosity about the laws that govern learning. The results may have practical consequences, but they are not their chief concern.

Applied research seeks to improve the human condition by discovering something that can be put to practical use. A psychologist trying out the different methods of teaching algebra in a school classroom is concerned with finding the most effective way of teaching mathematics. The result may have implications for a more basic or fundamental understanding of learning. But the goal is a practical one of improving teaching methods. Of course, the methods that the psychologist wants to test in the classroom may be suggested by the basic research of the laboratory scientist. Thus, both basic research and applied research are equally important, for any research aims at scientific curiosity and the practical goals at the same time.

Some psychologists do basic research, some do applied research, and some provide professional services.

Picture a psychologist at work and you would begin to visualize.

A white-coated scientist probing a rat's brain. An intelligence researcher measuring how quickly an infant becomes bored with (looks away from) a familiar picture. An executive proposing a new "healthy life styles" employees-training programme. Someone at a computer keyboard, analyzing data on whether adopted teens have temperaments more like their adoptive parents or like their biological parents. A traveler in route to collecting data on human values and behaviours in different cultures. A therapist listening carefully to a client's depressed thoughts.

Psychology is a meeting ground for different disciplines, and thus a perfect home for those with wide ranging interests. In their diverse activities, from biological experimentation to cultural comparisons, psychologists share a common quest: describing and explaining behaviour and the mental processes.

About half the people who have advanced degrees in psychology, work in colleges; universities, although teaching is not always their primary activity. Thy may devote much of their time to research or counseling. Other work in public schools, in hospitals or clinics, in government agencies or in business and industry. Those in private practice, who offer their services to the public for a fee, represent a relatively small but growing fraction of the field. Psychologists do a variety of things in a variety of locations.

Psychology is also a helping profession devoted to such practical issues as how to have a happy marriage, how to overcome anxiety or depression and how to raise children. Clinical psychologists study, assess and treat troubled people. After graduate school training, they administer and interpret tests, provide psychotherapy, manage mental health programmes and conduct research. By contrast, psychiatrist, who also often provide psychotherapy, are medical doctors licensed to psychological disorders. Some practitioners who are influenced by Sigmund Freud's psychoanalytic perspective, are called as psychoanalysts who deal with problem arising from unconscious desires and unresolved childhood conflicts.

With perspectives ranging from the biological to the social, and with settings from the clinic to the laboratory, psychology has become a meeting place for many disciplines. More and more psychology connects with fields ranging from mathematics and biology to sociology and philosophy. Also, psychologists teach in medical schools, law schools, theological seminaries, Teacher's Training Colleges for B.Ed. and M.Ed. students, Nursing Colleges etc. They also work in hospitals, factories and corporate offices. They engage in interdisciplinary studies, such as psychohistory-psychological analysis of historical characters, and psycholinguistics-the study of the relationship between language and its user's thinking and behaviour.

The influence of psychology also penetrates into modern culture. Knowledge transforms, learning to read, to understand the solar system, and to comprehend how people think and act. Learning the findings of psychology also changes people. People no longer judge psychological disorders as a moral failing, treatable by punishment. They less often regard and treat women as men's mental inferiors. Thy no longer view and rear children as ignorant beasts in the need of taming. In each case, knowledge has modified attitudes and through them behavoiur.

Some psychologists conduct basic research that builds psychology's knowledge base. In the pages to follow you will find a wide variety of such researchers. Biological psychologists explore the links between brain and mind. Developmental psychologists study our changing abilities from womb to tomb. Personality psychologists investigate our inner traits. Experimental psychologists find the cause and effect relationship. Physiological psychologists find out the relationship between biological processes and behaviour.

Other psychologists conduct applied research that tackle practical problems. For example, industrial or organization psychologists study and advise on behaviour in the workplace. They use psychology's concepts and methods to help organizations select and train employees, boost morale and productivity, and design product and assess people's responses to them. Clinical psychologists deal with assessment and treatment of psychological disorders. Counseling psychologist deal with less serious psychological problems.

Having said psychology has its applied side, it aims solving 'real life' or practical problems. Let us read a interesting example.

Were you afraid of the dark as a child? This is one of the most common childhood problems. Psychologists have developed a number of methods to help children overcome these fears. Psychologist Jean Giebenhain and Stan O'Dell put some of these methods together into a parent-training manual and then tested how well the manual worked. They located the parents of six children who were sleeping with their lights on, or were unable to go camping or spend the night with friends. The manual taught the parents the following procedures:

Giving the child control via a rheostat: A rheostat allowed the child to set the illumination level of a room lamp which was placed inside the child's bed. The rheostat levels set by the child were recorded every night.

Relaxation training: Every night before bed time, the parents and children practiced procedures for getting very relaxed.

Positive self-statements: At the same time, the parents helped their children memorize and repeat positive statements about themselves and their ability to get along in the dark. Some sample statements were "I am brave …."and "I can take care of myself when…I am in the dark."

Record keeping and feed back: Every night, the children set their rheostat at the lowest level they thought they could tolerate. the levels were numbered from I (total darkness) to 11 (maximum brightness). The goal was to make the light dimmer by one-half number every night. A graph showed the child's setting for each night. Every morning, the parents and children recorded the child's setting from the night before and cheeked the child's progress.

Rewards for success: Whenever the children's morning entry showed progress, the parents responded with praise, hugs and sometimes special treats.

Phasing out rewards: Whenever the child reached the low level of illumination that the parents and experiments had agreed to aim, for the rewards were gradually phased out. The hope was that being brave in the dark would becomes its own reward.

The hope was apparently well founded. Within two weeks, all the children were sleeping all night with their light at or below the goal level. And the children's reports on a "fear thermometer" indicated that they were not afraid. The experimenters checked up on the children three months later, then six months later and one year later. Each time, it was found that the children were doing as well as, or better than, they had at the end of training.

a. Psychology in Industry

Industrial psychologists is concerned with selecting people most suitable for a particular job, by using intelligence and aptitude tests, developing training programmes and management consultancy with industries

and businesses situations. Industrial psychologists also deal with promotion, supervision, and interpersonal relationship among the employees and between the employers and employees. They study such aspects as fatigue, accidents and working conditions and their improvements in industry that involve the morale and welfare of employees. Industrial psychologists are also called as organizational psychologists.

Today, many industries use many psychological tests in their placement and training programmes. Private and public organizations also apply psychology to counsel employers, and to alleviate industrial strike. The applied psychologists who do this work are sometimes called personnel psychologists. And for still another, may do research on consumer attitudes towards the company's products, by applying the psychological principles to minimize practical problems of work and commerce.

These are a few dimensions of Industrial psychology like the engineering psychologist who seek to make the relationship between people and machines as satisfactory as possible- to design machines so that human errors are minimized. For example, engineering psychologists were involved in developing space capsules in which astronauts could live and function efficiently. Designing underwater habitats for oceanographic research and developing artificial limbs and other devices for handicapped individuals are other examples of their work. Along with engineering psychologists there is a group of psychologists called environmental psychologists who are concerned with problems of noise, air and water pollution, overcrowding and the psychologically optimal design of working and living areas. Yet another type of psychologists, called the consumer psychologists, deal with techniques of marketing, advertising and propaganda.

Ultimately, industrial psychologists aim at increasing productivity, improving the performance of the employees and finding good market for the products, which is essential for building greater productivity and industrial peace.

b. Psychology in Community

Community psychologists deal with human behaviour problems with a new approach. They emphasize that a great deal of environmental factors is responsible in causing adjustment difficulties. Amelioration or minimizing of man's problems to a great extent rests with the manipulation of these environmental causes, instead of passively waiting for these problems to be solved.

The development of community psychology started in 1965, when a group of psychologists headed by Hersch, engaged in developing mental health programmes. The community psychologists were expected to make use of their scientific training to create knowledge and programmes for better mental health, by assuming decision making roles in the society and by being political activists.

Community psychologist's prime aim is to promote mental health at the community level, by preventing and treating psychological problems. They evaluate and improve community organizations and involve in public programmes such as employing the physically handicapped, rehabilitating the juvenile delinquents and caring for the elderly.

c. Psychology in Family

The application of psychology in family deals with certain personal problem among the family members like is everyone happily married? Does every couple have children? What happens to adults and children when committed relationships end? Aside from marriage, what kind of intimate relationship is possible? How does family vary for those from different social classes and ethnic groups?

When asked what they want from a partner, they indicate that they are looking for someone with whom to share affection, intimate secrets and companionship. They strive to obtain and maintain secure, lasting relationship-but which may not always be possible. This results in problems in family like low frustration tolerance among the partners, diverse or separation, extramarital relationships, widowhood, infertility, conflict, role strain due to psychological distress and contradictory responsibility etc.

Apart from the problems between the husband and wife, the children without whom one cannot call it a family, sometimes pose the greatest threat. The child in the family may be mentally retarded, physically handicapped, a spastic child, slow learner, have learning disability etc. The psychologists play a vital role in dealing with such serious problem and help the child with various intervention strategies, depending on the intensity of the problem. The adolescents in the family may be under stress and storm, for they are neither a child nor an adult. Related to this, there may be communication gap or generation gap, leading to misunderstanding or adjustment problems. Effective guidance and counseling by the family counselors prove successful in reducing such problems.

The famous mother-in-law or daughter-in-law problems or the problems of the elders in the family are the other side of the coin. The advent of crèche, orphanages, or home for the aged are all the outcome of family imbalances. Here comes the role of the marriage or family counselor who deal with the marital, family, personal or emotional problems. The application of various effective psychological techniques by the marriage or family counselor may minimize such haphazard in the family.

d. Psychology in Education

The elementary and secondary schools provide a wide range of opportunities for psychologists. Because the beginnings of serious emotional problem appear in the early grades, many elementary schools employ psychologists, whose training combines courses in child development, education and clinical psychology. These school psychologists work with individual children to evaluate learning and emotional problems; administering and interpreting intelligence, achievement and personality tests is part of their job. In consultation with parents and teachers, they plan ways of helping the child both in the classroom and in the home. They also provide a valuable resource for teachers, offering suggestions for coping with classroom problems.

Educational psychologists are specialists in learning and teaching methods. They help to train teachers with effective psychological techniques. They may work in the schools, but more often are employed in colleges, universities, or other institutions of higher learning, where they do research on teaching methods. Educational psychologists are usually involved with more general, less immediate problems, and are concerned with increasing the efficiency in learning by applying psychological theories of learning and motivation to the curriculum.

Much of the school psychologists job consists of diagnosing leaning difficulties and trying to remedy them. Using tests and information gained from consultations with the student and his or her parents, the school psychologists tries to pinpoint a problem and suggest action to correct it. For instance, a school psychologists suggests that a poor reader be assigned to a remedial reading class. School psychologists are involved in vocational and other forms of counseling. They are the school counsellors.

e. Psychology in Health:

“Health is wealth” – no doubt. Here health is referred in both physical and psychological well-being. The human beings is a product of both the body and mind, where one cannot exits without the other. Both are equally important for the smooth functioning of the individual. Deficiency or disorder in either the body or the mind results in various complications in the individual within and without.

In psychology, these disorders are called as psychosomatic and somatapsychic problem, which are dealt in detail in the field of abnormal psychology. The influence of the mind on the body or vice versa, which leads to mentally ill health in the individual. Thus, it is the role of the psychologists to promote mental health, or mental hygiene and maintain stability among the human race. On the other hand, the physical or the bodily health problems, are usually dealt with by the physicians or the psychiatrists where they would prescribe appropriate medicines and treatment. What is meant by mental health. Mental health may be defined by the ability to function effectively and find satisfaction in life, inspite of all stress and strain. It also refers to absence of disease, feeling of well being and well adjusted, and the people with mentally ill heath may be helped to restore mental health atleast to some extent.

f. Psychology in Self-Development

The aim of psychology, as already mentioned, is to understand, predict and control behaviour. It is easier to say than to do. Self understanding or answering the question ‘who am I ?’ is not referred to merely your name, age, education or occupation. Only if the individual understands oneself, he/she can develop. Development refers to the qualitative aspects rather, than merely the quantitative aspects as in growth.

The qualitative aspects may be the individual’s sincerity, punctuality, honesty, assertiveness, dominance etc. which put in a nut shell, we call it as personality in psychology. Personality is decided by both the physical and psychological qualities and gratifying relationship with friends, spouse, parents or children. The individual should be able to work effectively, productively, laugh, play, relax and have fun which is becoming a rare phenomenon in the present day mechanical and competitive world. The most important characteristic of a mentally healthy individual is the realistic appraisal of his/her strength and weakness. They would feel worthy member of the human race and freedom from psychological handicap, and should be able to control one’s

thoughts, feelings and actions. Cheek out for yourself whether you have the above mentioned characteristics, atleast a few, though not all, for you should be mentally healthy first, and then promote them to others.

Not all individuals may be cent percent mentally healthy, and it is much worse among the mentally disordered. Hence with the fascinating field of psychology, by providing various treatment measures such as relaxation, systematic desensitization, cognitive restricting, aversion therapy, biofeedback, guidance and counseling, mental health may be promoted.

Self-development deals with self-concept, self-esteem, self-awareness, and self-analysis or self-profile. Now, how do you develop yourself?

Let us work out a small exercise by using the principles of psychology which we are indebted to always, for us to know and develop ourselves. But as a preliminary requisite, you should first have an open mind to come out with your strengths and weaknesses and readiness to change should be promoted and reluctance to change should be evaded. Now get ready, go….

Take out a fresh plain paper, divide into two columns, and one side write your strengths and on the other your weakness, (or points to improve-for as psychologists we want to be optimistic). Feel free to write whatever comes to your mind, be sincere and do not think for a long time or manipulate. Is the list ready? Now, take another fresh page, and give it to your close friend, who knows you well, and ask him or her to write your strengths and weakness from their point of view. You may give 5-10 minutes for instance. Is the second list over? Now, you compare the first and second list, and find out the common characteristics among both the strengths and weakness. Whichever is the common, is the answer to “Who am I?” Now you know who you are?

For the self to develop, you should try to strengthen your strengths and weaken your weakness. Now you will agree that psychology is interesting and applied?

g. Psychology in Human Relations.

Psychology plays an important role in human relations. No man is in isolation and we need to relate with human beings, at least to vent their feelings and ease themselves though not aiming to help others, which is also equally important.

Human relations may be both expressed-where we express our thoughts and feelings to others, or wanted-where we may want affection, care, love, warmth etc. from others. But there are times, when human beings land up in some frictions, due to faulty communications, not being assertive when the need arises, but rather aggressive etc.

By the vast application of psychological principles and techniques, human relations may be promoted in a variety of ways like, (1) generating a personal agenda where the individuals may reveal their feelings (2) sensitizing the interpersonal dimensions by making the individuals aware of their interpersonal relations, (3) checking self-understanding him/her and (4) making individual interpretation or get feed back from others, all of which promote social desirability and effective human relations.

The ultimate aim of psychology is to make adequate adjustments in the society, whatever may be the challenges, and this can be achieved successfully with good human relations.

The applications of knowledge to practical problems is both an art and a science. It is a skill, or a knack for doing things, which is acquired by study, practice and special experience. The psychotherapist talking to a worried client, the educational psychologist advising a school board on a new curriculum, the clinical psychologist supervising group therapy in a mental hospital, and the social psychologist trying to lessen tensions between management and workers in a large industry are all practicing psychology. Just as a physician or engineer develop skills in using scientific knowledge to solve practical problems, these psychologists have learned, through special training, the artisting or knack of applying psychology.

Of Course, the ability to apply psychological principle is a hard-won skill, you cannot expect to become an expert from reading this lesson. Special and practical experience is needed. But after reading this lesson, you should be able to apply psychological principles to atleast some of the things that happen in your daily life.

From the point of view of psychologists, television in the US, despite its great potential, has not been beneficial to society. Psychologists worry not only the consequences of violent programming, but also about the negative effects of television on reading, stereotypes, and conceptions of morality. Despite these concerns, it is clear that television has the potential not only to teach, but also to engage youngsters in learning. One of the innovations of the Children's Television Workshop (CTW), the organization that produces the popular show, "Sesame Street," is a series of television segments aimed at improving mathematical performance. An especially engaging and effective series of segments is called Mathnet. It is made up of brief episodes featuring two police officers, whose mannerisms are modeled closely after the network television program and movie, *Dragnet*, solving mathematically related mysteries. The series is devised on the basis of input from mathematicians, psychologists, television producers, and educators. The Mathnet effort specifically, and Children's Television Workshop in general, are examples of the way psychologists can work cooperatively with other experts to make positive contributions to our society, make positive contributions to our society, and through their work with young people, our future.

The Jigsaw Classroom

One of our nation's most fundamental problems is overcoming ethnic conflict (Brown, 1986). Psychological research on cooperation and competition suggests that one way to overcome intergroup hostility and foster cooperation is to confront people with a task that can only be solved through joining resources and working together. Social psychologist Elliot Aronson (1978) has used this insight to build a problem-solving exercise for elementary school children, which can only be completed when each child participates. The problem that needs to be solved is like a jigsaw puzzle, and each child in the exercise has a piece. The correct solution depends on gathering all the relevant information, and each child has a critical portion of that information. All the children in the exercise need each other to devise the correct solution.
Research shoes that children learn respect and cooperation after working together in "jigsaw classrooms." They also experience increase in self-esteem and morale as well as more liking and empathy for children from other racial and ethnic groups (Aronson & Bridgeman, 1979). By applying the insights of basic research on intergroup relations, psychologists have been able to make a dent in the otherwise seemingly intractable problem of ethnic conflict in our society. Nevertheless, it is clear that there is room for lots more work in this area.

Eyewitness Testimony

One of the most persuasive types of evidence in a criminal trial is the testimony of an eyewitness. However, psychological research demonstrates that eyewitness testimony is surprisingly unreliable. It is flawed by all the shortcomings of everyday human information processing. Although our memory has an enormously impressive capacity, it can be very inaccurate with respect to minor, but significant, details. Research by cognitive psychologist Elizabeth Loftus (1986) suggests that the working of questions by trial lawyers can lead people to reconstruct past events in erroneous ways. For example, people asked "How fast were the cars going when they *smashed* into each other" often mistakenly recalled that the accident involved broken glass. Subjects asked, "How fast were the cars going when they *hit* each other?" were less likely to make this error. Loftus' work has had a major impact on the way the criminal justice system regards eyewitness testimony. The chances of innocent people being falsely convicted on the basic of erroneous testimony may be considerably reduced.

Psychology as a science

A science is a body of systematized knowledge that is gathered by carefully observing and measuring events. Psychologists do experiments and make observations which others can repeat. They obtain data often in the form of quantitative measurements which they can verify. Thus experimentations and observation are the core of scientific psychology.

As a science, psychology is systematic. Data from experiments and observations are essential and they must be organized for us to understand the events. Scientific theories are general principles which summarize many observations and predict what can be expected to happen in new situation.

In the book 'introduction of psychology' by Worchel and shebilske, psychology is defined as "the study of me". That is, I am the center of attention, and its findings directly apply to me.

Presently psychology is defined as the "scientific study of behaviour (human being and lower animals) and mental process". When we say psychology is a scientific study of behaviour, it means that the behaviour can be proved with factual information. The use of scientific procedures include systematic observation and

experimentation by collecting and gathering data. The mental process in the above definition refers to any psychological or cognitive activity which takes place in the organism from birth to till the individual is alive.

The word behaviour refers to the activities of the organism that can either be observed by another person, or by using certain psychological tests. Most of the verbs such as eating, climbing, jumping, walking – the physical activities or thinking, remembering, forgetting – the mental activities, refer to behavioural elements that can be observed and described as they occur. The components of behaviour are (i) conscious experiences and (ii) unconscious process. The conscious experiences of the organism are those experiences of which the organism is aware, for instance, being hungry or having pain when injured. The unconscious processes include the desire, urges, fear, etc. The conscious or the unconscious behaviours are inferred from either the verbal report of the individual concerned or though inference of the manifest behaviour of the person. Thus, both the conscious experiences and the unconscious processes are both equally important for us to understand the total behaviour of the organism. Behaviour is further viewed as covert behaviour which is the inward behaviour and overt behaviour that is revealed outwardly. Behaviour may also be desirable behaviour that is, an individual being truthful, disciplined, punctual etc. or may be undesirable behaviour such as stealing, lying, being dishonest and so on.

Man is essentially a living organism. Psychology is primarily concerned with responses of these organisms to the outside world. The stimuli from the environment act upon these organisms which in turn respond to these stimuli. Hence psychology may be considered to be a biological science. Besides being a biological organism, man is also a social being. This behaviours is shaped by the behaviour of others too. Human beings live in groups and their behaviours are conditioned by the group in which they live. Thus, psychology may also be called a social science. Since psychology is based both on biology and social interaction, it may be called as a Bio-social science